

ICS 67.220.20
CCS C 54;X40



**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB 28315-2012

Food additives -- Lithospermum red

食品添加剂 紫草红

(English Translation)

Issued on: April 25, 2012

Implemented on: June 25, 2012

Issued by: Ministry of Health of the People's Republic of China

Table of Contents

- 1 Scope
- 2.1 Molecular formula
- 2.2 Structural formula
- 2.3 Relative molecular mass
- 3 Technical requirements

1 Scope

This standard applies to Lithospermumaceae (Lithospermumerythrozizn; Macrotomia euchroma) roots as raw materials, extracted, refined from the food additives Lithospermum.

The molecular formula, structural formula and relative molecular mass of the principal component

2.1 Molecular formula

Lithospermum. C₁₆H₁₆O₅

2.3 Relative molecular mass

Lithospermum. 288.295 (according to 2007 International relative atomic mass)

3 Technical requirements

3.1

sensory requirements. should be consistent with the provisions of Table 1.

Table 1 sensory requirements

The project requires a test method Color deep purple State oily liquid Take the appropriate amount of sample placed in a clean, dry white porcelain dish, in the natural light, Observe its color and state

3.2

Physical and chemical indicators. should be consistent with the provisions of Table 2.

Table 2 Physical and chemical indicators

Item Index Test Method Color Price E1 m (515 ± 3) nm ≥ 100 Appendix A A.3 Residual Solvent/(mg/kg) ≤ 50 Appendix A A.4 Lead (Pb)/(mg/kg) ≤ 3 GB 5009.12 Total arsenic (in As)/(mg/kg) ≤ 1 GB/T 5009.11 Note. Commercial Lithospermum products should be in line

with this standard Lithospermum as raw material, can be added to edible vegetable oil or ethanol and made, the color index claim.

Appendix A

Testing method

A.1 General provisions the reagents and water used in this standard refer to the pure reagent and the tertiary water specified in GB/T 6682 when no other requirements are specified.

Standard titration solution used in the analysis, the standard solution for the determination of impurities, preparations and products, in the absence of other requirements, according to GB/T 601, GB/T 602, GB/T 603. The solution used in this test does not specify what kind of solvent preparation, refers to the aqueous solution.

A.2 Identification test A.2.1 Solubility Do not dissolve in water, partially soluble in alkaline aqueous solution, soluble in acetone and n-hexane.

A.2.2 Maximum absorption peak Take A.3 color price determination of Lithospermum test solution, with a spectrophotometer detection, near 515nm maximum absorption peak.

A.2.3 Chromatographic test A.2.3.1 Exhibition layer solution Petroleum ether. ethyl acetate = 9. 1 (volume ratio).

A.2.3.2 Analysis steps the sample of acetone solution on the silica gel plate, the spot after the silica gel plate has been placed in the chromatography solution saturated chromatography layer, silica gel Plate showed four spots, the color were lavender,, purple,, the Rf values were 0.20,0.35,0.53,0.64.

A.3 Determination of color price A.3.1 Reagents and materials acetone.

A.3.2 Instruments and equipment Spectrophotometer.

A.3.3 Analysis steps Weigh 0.05g ~ 0.1g sample, accurate to 0.0001g, with acetone set in 100mL volumetric flask, shake, and then from the precise suction Take 5mL, acetone dilution set in a 100mL volumetric flask, shake, with acetone as the reference solution, with a spectrophotometer in the $515\text{nm} \pm 3\text{nm}$ the absorbance was measured in a 1 cm cuvette at the maximum absorption peak in the range. Absorbance should be controlled between 0.3 to 0.7, otherwise it should be adjusted Sample solution concentration, and then re-measured absorbance.

A.3.4 Calculation of results the color of the test sample concentration of 1%, with 1cm cuvette, at $(515 \pm 3)\text{ nm}$ measured absorbance $E_{1\text{ m}}(515 \pm 3)\text{ nm}$, Calculated according to formula (A.1).

$E_{1\text{ m}}(515 \pm 3)\text{ nm} = A_c \times (A.1)$ where.

A --- the actual determination of the sample solution of the absorbance value;

c - the value of the test solution concentration in grams per milliliter (g/mL);

100 --- concentration conversion factor.

The experimental results are based on the arithmetic mean of the parallel measurement results. The absolute difference between the two independent determinations obtained under repeatability conditions the value should not exceed 2% of the arithmetic mean.

A.4 Determination of residual solvent A.4.1 Sample preparation After the sample was heated to a flow rate in a 50 ° C water bath, 20 g was weighed into a 100 mL beaker and 40 g was added to the water bath.

50 ° C of cold pressed vegetable oil, the two mixed evenly, weighed diluted 25g pigment into the standard gasification bottle, sealed, to be tested Sample.

A.4.2 Determination

To prepare the test sample to be tested, the other steps in accordance with GB/T 5009.37-2003 4.8 residual solvent specified method Determination.

A.4.3 Calculation of results the solvent residue x_1 of the sample to be tested is calculated according to the formula (9) in GB/T 5009.37-2003.

The amount of solvent residue in the sample is calculated according to equation (A.2) $x = x_1 \times 3$ (A.2) where.

x_1 --- the amount of solvent residue of the diluted sample to be measured as measured by GB/T 5009.37;

3 - the dilution factor of the sample.